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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/784,086 | 02/20/2004 | Phillip Burns | 1047.0100 | 7019 |

34170 7590 10/05/2005

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| EXAMINER | |
|---|---|
| WAKS, JOSEPH | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2834 | |

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

ED

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/784,086 | BURNS, PHILLIP | |
| | Examiner | Art Unit | |
| | Joseph Waks | 2834 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *23-28* is/are allowed.

6)☒ Claim(s) *1-21 and 29-33* is/are rejected.

7)☒ Claim(s) *20-22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

1. The election/restriction requested in telephone conversation on September 27, 2005 with Glenn E. Gold is withdrawn after further consideration.

### *Information Disclosure Statement*

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 4 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berliner (US 481,999) in view of Yadav et al. (US 2002/0160191).

Berliner discloses a magnetic dipole module including a permanent magnet A and an electrical coil B enclosing at least a portion of the magnetic dipole module. However, Berliner does not disclose a magnetic dipole module having a plurality of ferromagnetic nanocrystals disposed in a matrix.

Yadav et al. disclose the use of a plurality of ferromagnetic nanocrystals disposed in a matrix for the purpose of a significant reduction of magnetic loss (see page 11, Example 5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the dipole module as taught by Berliner and to provide the plurality of ferromagnetic nanocrystals disposed in a matrix as taught by Yadav et al. for the purpose of significantly improve the electric output of the device by reducing the dipole magnetic loss.

Re claim 29, the combination discloses the structure as claimed. Claim 29 that merely recites connecting and using the disclosed features together is inherent to the disclosed structure.

5. Claims 1, 4, 5, 9, 10, 13, and 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edison (US 476,983) in view of Yadav et al. (US 2002/0160191).

Edison discloses a magnetic dipole module including a permanent magnet or an electromagnet A, an electrical coils B enclosing at least a portion of the magnetic dipole module, and enclosure N, S of soft magnetic material i.e. iron. However, Edison does not disclose a magnetic dipole module having a plurality of ferromagnetic nanocrystals disposed in a matrix.

Yadav et al. disclose the use of a plurality of ferromagnetic nanocrystals disposed in a matrix for the purpose of a significant reduction of magnetic loss (see page 11, Example 5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the dipole module as taught by Edison and to provide the plurality of ferromagnetic nanocrystals disposed in a matrix as taught by Yadav et al. for the purpose of significantly improve the electric output of the device by reducing the dipole magnetic loss.

Re claims 29-33, the combination discloses the structure as claimed. Claims 29 and 30 that merely recite connecting and using the disclosed features together is inherent to the disclosed structure.

6. Claims 2, 3, 6-8, 14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edison (US 476,983) in view of Yadav et al. (US 2002/0160191) as applied to claim 1 above and further in view of Masayuki (US 6,660,566).

The combined magnetic dipole module discloses all elements essentially as claimed. However, it does not disclose the matrix including a material transparent to the radiant energy.

Masayuki discloses a matrix with a heat conductive body in a form of aluminum oxide, nickel or copper for use with power supply or electrical devices for the purpose of effectively radiating the heat from the device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined dipole module and to provide the heat conductive body in a form of aluminum oxide as taught by Masayuki for the purpose of significantly improve the dipole capability of absorbing and rejecting the applied radiant energy.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edison (US 476,983) as applied to claim 1 above.

The combined dipole discloses the claimed invention except for the second magnetic dipole module having a second electrical coil enclosing at least a portion of the second magnetic dipole module for the purpose of increasing the electrical output from the system, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

7. Claims 1, 15, 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edison (US 476,983) in view of Park et al. (US 6,849,926).

Edison discloses a magnetic dipole module including a permanent magnet or an electromagnet A, an electrical coils B enclosing at least a portion of the magnetic dipole module, and enclosure N, S of soft magnetic material i.e. iron. However, Edison does not disclose a magnetic dipole module having a plurality of yttrium-iron-garnet nanocrystals disposed in a matrix.

Park et al. disclose the use of a plurality of yttrium-iron-garnet nanocrystals disposed in a matrix for the purpose of reduction of magnetic loss that has excellent thermal and mechanical properties and high electrical strength.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the dipole module as taught by Edison and to provide the plurality of yttrium-iron-garnet nanocrystals disposed in a matrix as taught by Park et al. for the purpose of significantly improve the electric output of the device by reducing the

dipole magnetic loss while maintaining excellent thermal and mechanical properties and high electrical strength.

***Allowable Subject Matter***

8. Claims 23-28 are allowed.

Re claim 23, the feature of the magnetic dipole module having a cylindrical core formed of a plurality of transparent annular disks having a central opening, a plurality of soft ferromagnetic annular disks, each said soft ferromagnetic annular disk having both sides coated with a layer of ferromagnetic nanocrystals embedded in a matrix and having a central opening, wherein the plurality of ferromagnetic annular disks being alternately stacked with the plurality of transparent annular disks, and the cylindrical core extending through the ferromagnetic and transparent disc openings, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Claims 24-28 are allowed as being dependent on allowable claim 23

9. Claims 20-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Prior Art***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (571) 272-2037. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joseph Waks
Primary Examiner
Art Unit 2834

9/28/05